

2006

CEO

Leadership Forum

Advancing Practice
in State DOTs from
Good to Great

A Summary Report

Conducted By:

UNIVERSITY OF MINNESOTA



CENTER FOR TRANSPORTATION STUDIES

In Association With:

American Association of State Highway and
Transportation Officials (AASHTO)

Federal Highway Administration (FHWA)

Transportation Research Board (TRB)

With Funding Support From:

National Cooperative Highway Research Program
(NCHRP)

September 24–26, 2006

McNamara Alumni Center
University of Minnesota Campus
Minneapolis, Minnesota

2006

CEO Leadership Forum

Advancing Practice in State DOTs from Good to Great

A Summary Report

Conducted By:

UNIVERSITY OF MINNESOTA



CENTER FOR TRANSPORTATION STUDIES

In Association With:

American Association of State Highway
and Transportation Officials (AASHTO)

Federal Highway Administration (FHWA)

Transportation Research Board (TRB)

With Funding Support From:

National Cooperative Highway Research
Program (NCHRP)

To the Reader,

This report summarizes the 2006 CEO Leadership Forum. Over three days, transportation leaders from across the nation explored three critical issues facing our state transportation organizations: roles and partnerships, customers and stakeholders, and funding and finance. The forum brought together some of the best transportation minds in the country to tackle these challenges and develop action plans to support CEOs and their staffs.

Clearly, we all face many of the same challenges, and we are primed to pursue new opportunities and directions. This report summarizes the thought-provoking presentations and conversations we had with each other, and lists the 22 action plans produced at the forum. We are committed to following up on these directions.

The accomplishments of this forum will set the stage for the future of DOT leadership. As we work together, we can move our industry forward.

—Harold Linnenkohl
President, AASHTO

Contents

Introduction	1
Presentations	2
Conversations	6
Forum Summary	10
Implications for Sponsors	11
Working Groups	13
Action Plans	14
Participants	20
White Paper Executive Summaries ..	A1

Introduction

Building on the success of forums held in 2000 and 2003, the Center for Transportation Studies (CTS) conducted this third CEO Leadership Forum September 24 through 26, 2006, at the University of Minnesota, in association with the American Association of State Highway and Transportation Officials (AASHTO), the Federal Highway Administration (FHWA), and the Transportation Research Board (TRB). Funding support was provided by the National Cooperative Highway Research Program (NCHRP).

The forum offered state department of transportation (DOT) chief executive officers (CEOs) and their top staff the opportunity to share experiences—good and bad—with peers from around the country. The discussions centered on three themes:

- Roles and partnerships
- Customers and stakeholders
- Funding and finance

Prior to the event, current practices from select state DOTs related to the three themes were synthesized in white papers, which were then discussed in various sessions throughout the forum. Participants also were provided the chance to offer their recommendations, based on the discussions, for needed research and other actions.

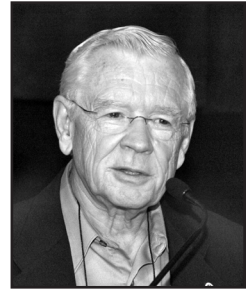
CTS director Robert Johns, along with Minnesota Department of Transportation (Mn/DOT) deputy commissioner Doug Differt and AASHTO president Harold Linnenkohl, opened the event. Johns described the nature of the forum, explaining that the goal was not only to learn from each other the best practices currently in place with state DOTs, but also to identify the strategic challenges facing DOTs and develop the research and action plans needed to improve in all areas.

“It really is a unique opportunity that we can get together in one room and talk to one another,” Differt acknowledged. “There are a broad range of challenges facing our departments, many of them similar, and it’s time for us to work on these things. We are all looking for innovation and creativity.” To do that,

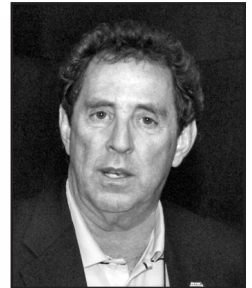
he added, “we need ongoing education and research. A lot of the innovative things we do [at Mn/DOT] start as research projects, and we rely on our partnership with CTS to get them done.”

“As I travel around the country and talk to a lot of folks, these three themes [roles and partnerships; customers and stakeholders; funding and finance] seem to surface frequently,” Linnenkohl remarked. “As Doug said, we all have many of the same challenges. We all face financial crunches, the changing roles of DOTs, and the challenges of meeting the customers’ needs. This forum will build on the initiatives established in the first two forums. The three themes we’ll discuss here are also in the AASHTO 2005–2010 strategic plan, so they support the goals AASHTO has put together. The work you’ll do over the next few days will set the stage for the future, not only for DOTs and the people who work in them today, but also for the future leaders in transportation. There are a lot of good transportation minds in this room. We’ve got to put our best practices on the table—maybe someone else will find the information useful, too. As we work together, we can accomplish a lot for our industry.”

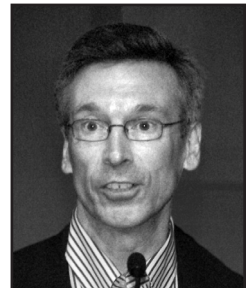
This report summarizes the main events of the forum and lists the research action plans developed during the working sessions.



Doug Differt



Harold Linnenkohl



Robert Johns

Presentations on State DOT Practices

Executive summaries of the white papers are in the appendix of this document.

The full white papers are available for download on the AASHTO Web site: www.transportation.org/meetings/CEOLeadership

Prior to the event, three consultants—Steve Lockwood, principal consultant with PB Consult; Marcy Schwartz, senior vice president and director of transportation technology with CH2M Hill; and Lance Grenzeback, senior vice president with Cambridge Systematics—each produced a white paper focusing on one of the three themes. They presented highlights from their papers at the forum.

Changes in Roles and Partnerships: Toward the 21st Century State DOT

Lockwood tackled the first theme, roles and relationships, and outlined the driving forces behind the ongoing transformations of roles and relationships within state DOTs. The state DOT mission is changing, he asserted, in terms of scale and scope of the program, increased demand for performance and accountability, technical and financial complexity of a broad range of activities, and systems implications for the network as a whole.

These types of changes lead to a variety of strategic challenges. For example, adjust-

ing the staff to meet new needs has been a continuing problem as DOTs are forced to downsize despite the complexity of their programs. Another challenge is the introduction of performance management programs designed to move toward the continuous improvement demanded by more and more customers. Yet another challenge revolves around DOTs having to work with a larger array of partners in order to deliver services. “Historically these partnerships were forged informally,” he explained. “But the rapid turnover in leadership, not only in DOTs but also in the public safety community, makes these well-developed but fragile relationships unsustainable over the long haul.”

Lockwood then described four strategies DOTs can apply as roles and relationships evolve: devolution to rationalize intergovernment efficiency and responsiveness; outsourcing/insourcing to access special skills; privatizing public partnerships to transfer risks and responsibility permanently; and collaborative service delivery to achieve system coordination/consolidation. He acknowledged



Lance Grenzeback, Marcy Schwartz, Steve Lockwood

that while many DOTs have been involved in these strategies for some time, the efforts appear now to be focused more on core activities and not just on support services as in the past. “These are permanent changes and may involve other parties, both public and private. This is more and more evident as DOTs focus on measured mobility-related outcomes,” Lockwood explained.

He next described crosscutting trends emerging as these strategies are used more and more. One is the need for real-time interjurisdictional coordination. “This is not a quarterly meeting to coordinate program development, but rather, day-to-day operational coordination among different jurisdictions,” he said. “There are a lot of tough issues across cultures...whether it’s road/weather information systems or it’s corridor or incident management, all of those activities introduce a new type of relationship that we haven’t had much of in the past.” Lockwood further explained that several states now have formal contractual relationships that involve different allocations of risk, responsibility, and reward that can be applied under variant circumstances. “This field is going from ad hoc to something with more management and financial rigor.”

He then discussed outsourcing asset management contracting, explaining that DOTs pursuing this generally feel that by moving from “doing it themselves” to simply “managing it,” they are better able to focus on performance. “They begin to find competitive approaches to the production of services...they can ratchet up performance from contract to contract over a period of years, and thereby achieve some efficiencies and economies in this arena that are otherwise difficult to reach.”

Finally, Lockwood said, there is the issue of understanding that the other entities in the public or private sector with which DOTs work have different values and different priorities, and as such, the changes in roles and relationships require formal attention.

“Where do all of these things lead to in the long run?” Lockwood asked. “We are looking

toward a broad transformation of the state DOT’s role from a long era of being relatively self-contained. The pressure for service and outcomes, in customers’ terms, for things on a regional and area-wide basis and on an interstate basis across jurisdictions, and the need to work closely with other entities, all begin to lead toward a networked state DOT. In other words: we’re moving from rowing to steering. There are mechanisms that are needed to make these things happen, though; this cannot happen informally,” he concluded.

Building Credibility with Customers and Stakeholders

Schwartz then addressed *customers* and *stakeholders* and explained the difference between customer satisfaction and actually building credibility. While making customers happy is undoubtedly a good thing, she said, it is a difficult goal because customer and stakeholder interests often conflict. “Credibility differs from satisfaction in that it stems from a mutual understanding and respect between the DOT and its customers and stakeholders,” Schwartz said. “It also acknowledges the duty of government agencies to serve the public, and it provides a platform for moving forward with DOT funding and program-ming initiatives, such as delivering controversial projects, raising gas taxes, or initiating new financing or project delivery methods. My premise is that credibility with customers and stakeholders results from a combination of four elements: understanding their needs and priorities; exchanging information to develop mutually acceptable performance expectations for meeting those needs and priorities; organizing and delivering programs to meet agreed-upon performance targets; and communicating your program delivery.”

Although there are many strategies DOTs can use to build credibility, Schwartz focused on five:

1. Using survey results to drive program design and delivery
2. Including stakeholders and customers in strategic planning
3. Basing programming decisions on cus-

“We are looking toward a broad transformation of the state DOT’s role from a long era of being relatively self-contained.”

— Steve Lockwood

“Engaging stakeholders yields different—and better—results than just talking to the usual suspects. And it’s not only delivering prepared messages, but also asking the right questions and listening to the responses.”

— Marcy Schwartz

customer/stakeholder priorities

4. Institutionalizing meaningful customer/stakeholder involvement in project development as your way of doing business
5. Educating and communicating to stakeholders to demonstrate accountability

“Your strategies need to take into account how stakeholders relate to one another, and the strategies have to be applied with conscious attention to the various interrelationships of stakeholder groups to one another,” she noted.

Schwartz next briefly discussed the 11 case studies she selected to review in her white paper and described a number of common themes she found among these case study programs. She pointed out that implementation generally requires strong leadership and sustained effort and that integrating stakeholder-driven performance measures across many business processes requires effective top-down leadership. “The rapid turnover of DOT leadership creates both opportunities and barriers,” she added. “While new leaders have a certain license to initiate changes, consistency over time builds stakeholder trust and staff acceptance. Engaging stakeholders yields different—and better—results than just talking to the usual suspects. And it’s not only delivering prepared messages, but also asking the right questions and listening to the responses.”

She listed, for example, results of DOTs that “talked to the unusual suspects.” These include new safety legislation in Nebraska, revamped programming priorities in Minnesota, implementation of controversial projects in Maryland, and better project planning in Florida.

Another common theme, she said, seems to be the need for internal discipline and

perseverance—often in the face of considerable internal resistance—to implement various strategies. “Allowing stakeholders to participate in transparent programming decisions requires changes in staff attitudes, as evidenced in the Missouri and Montana case studies,” she explained. “Revamping project planning and development processes requires a heavy allocation of staff resources, as seen in the Maryland and Florida cases.”

Strategy implementation also tends to affect other business processes, Schwartz reported. “Successful first efforts in any one of the strategies often spill over and spawn the use of the other strategies. This allows leveraging of stakeholder networks and the extension of credibility into other DOT business processes. Successful use of stratified market research in the Pennsylvania case, for example, resulted in use of the information to drive programming priorities. Programming experience with regional work groups influenced the restructuring of Missouri’s long-range planning program to include broader public outreach.”

There are definitely implications for the future in these cases, Schwartz explained. “Many of the case studies suggest that strategy implementation often requires changes in business processes. New performance measures designed to reflect customer/stakeholder priorities may, for example, necessitate new data gathering, analysis, and management processes. Parallel changes likely will be needed in organizational competencies. Implementation of any of these strategies requires expertise in areas such as market research, public involvement, process design, communications, and asset management. Finally, more in-depth research to explore successful matching of credibility-building strategies with specific target groups is also required.”

Funding and Finance

Grenzeback was up next and offered a quick background regarding the amount of money DOTs spend annually on highways and transit. “We spend about \$170 billion

a year,” he explained. “Most of that is from fuel and vehicle taxes; about 25 percent from general taxes, property, and other types of specialized taxes, and transit fees and tolls. The problem is that we are falling about \$50 billion a year short in meeting the cost to maintain the system. Factor in the cost to improve, and we are falling behind about \$100 billion a year.”

In his white paper, Grenzeback examined several revenue-generating strategies including fuel taxes, registration and vehicle fees, tolling, local option taxes, and general property taxes. “We also looked at project and program financing techniques that do not necessarily generate more revenue, but allow you to leverage the money and spend it sooner than you would otherwise,” he said.

Based on review of several case studies, he came up with a set of observations. First, indexing and increasing motor fuel taxes seem to be a viable option and could generate the largest short-term yield. However, fuel tax increases alone will not suffice, as the rate of growth is likely to taper off. States have to look at a broader package of revenue strategies to fund their DOT programs.

He also observed that sales taxes on motor fuels are an alternative to increasing motor fuel excise taxes, and are attractive today because the price of gasoline is rising. However, there is no guarantee that prices will rise or be stable from year to year, and yields could vary greatly as prices fluctuate at the pump. And, while tolls seem to be an attractive and growing source of transportation revenue, the challenge is that revenues are limited by the number of “toll-able” facilities.

His case study review also revealed that bonding and related financing techniques can be effective at accelerating specific projects, and they offer a stop-gap measure to sustain underfunded transportation programs. With this, though, there is considerable concern around the fact that yield is limited by state debt caps and by the lack of new revenue streams to service the long-term debt.

“We saw also that asset leasing, as a revenue generating approach, is limited by the num-

ber of roads, bridges, and tunnels that have high enough traffic volumes to sustain tolling and pricing at rates attractive to private sector investors,” he reported. “And, we found a lot of interest in vehicle-miles traveled (VMT) or mileage-based user fees as a means to extend tolling and pricing to all roads, possibly replacing most gallonage-based motor fuel taxes. But, the technology and administrative systems to implement VMT fees are still a decade or more away.”

Grenzeback then discussed the lessons learned from the case study review. First, he explained, the public will support tax increases when state DOTs can make a compelling case for them. “If you can tie the increased taxes to specific, major capital investments that serve many constituencies across a state, it is more effective. It has not been effective when requests for increased taxes are sold as a congestion or traffic management program.”

Time and champions are important to gaining revenue increases, he continued, noting that almost all increases seen in the case studies required a major commitment of political capital. “Much of the success in gaining revenue increases hinges on the public’s perception of the state DOT as an effective and responsible steward of the state’s transportation budget and system. If they don’t believe you are spending the current money appropriately, it is very difficult to get more.”

Moving forward, Grenzeback explained that DOTs must aggressively develop portfolios of various revenue sources since the era of the motor fuel tax as the single, dominant, revenue source is waning. “DOTs also should ensure their programs and investments are clearly linked to economic development and job growth,” he said, “and they should pay increasing attention to how the public perceives their stewardship.”

“Much of the success in gaining revenue increases hinges on the public’s perception of the state DOT as an effective and responsible steward of the state’s transportation budget and system.”

— Lance Grenzeback

Conversations



Carol Molnau



Allen Biehler



Pete Rahn



Deb Miller

Forum participants took part in an interactive discussion of the three forum themes. The innovative format incorporated satellite-style seating around an inner ring of chairs designated for speakers. As the discussion evolved when new members entered the circle and others exited, it became evident that there were many crosscutting issues among the themes. Robert Johns served as moderator.

Minnesota Lt. Gov. Carol Molnau, who also serves as Mn/DOT commissioner, opened this session with a hearty welcome. “In June, we celebrated the 50th anniversary of the interstate system. Now the challenge is to improve our system for the next 50 years. But things have changed since 1956...changes in technology, economy, security, workforce, and politics are affecting how we operate our transportation system. These changes are creating more questions than ever, for even the most seasoned transportation leaders. I believe the great minds that can solve some of these issues are right here in this room, and we are excited to have you all here.”

Roles and Partnerships

Allen Biehler (Pennsylvania DOT) kicked off the discussion with background on how his department is working to better understand the relationships between transportation and land use. “We started three years ago with...meetings that included representatives from metropolitan planning organizations,

“...We realized that an important relationship exists between transportation and land use. This quickly turned into our recognizing the need to change some of the practices we’ve had in place for 50 years.”

— Allen Biehler

developers, and others interested in the transportation industry from urban, suburban, and rural areas of our state. From this discussion, we realized that an important relationship exists between transportation and land use. This quickly turned into our recognizing the need to change some of the practices we’ve had in place for 50 years.” The new dynamic—named Smart Transportation or Right Sizing—was introduced first to the department’s internal audience and later formalized as a focus area in its strategic business plan. “We want to turn our practices in a very different direction under the name of good stewardship.”

Pete Rahn (Missouri DOT) shared his thoughts on roles and partnerships. “From a management strategy, I think an organization can have only three relationships: one with its customers, one with its partners, and one with [contractors]...I’ve had contractors tell us that they are our customer, but I remind them that they are our partner...you really have to work with your partners to serve your customers.”



Rina Cutler, Frankie Giles, Ruben Anthony



Randy Halvorson



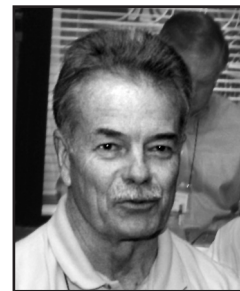
Johnny Bradberry



Tim Martin



Tom Norton



Will Kempton

Deb Miller (Kansas DOT) added, “We ought to be saying ‘we are your client, and we want you to care that we are getting what we need.’ Maybe we should talk less about us as their partners and more about us as their clients. Are there advantages, if over time, this language starts to change?”

The dialog continued to explore the changing nature of DOT partnerships today. “Now, we include MPOs, localities, and other players as early as possible in the long-range planning process and in the project-planning process,” explained Frankie Giles (Virginia DOT). “Rather than having these entities look at us as a narrowly-focused bureaucracy, we want to build relationships, build strong partnerships.”

“We need to increase the interaction that takes place among state agencies,” added Larry King (Pennsylvania DOT). “Collectively, we have a large amount of resources at our disposal, and we need to figure out how to combine the effects of transportation investments with other program investments.”

Randy Halvorson (Mn/DOT) pointed out that the changes necessary to facilitate this evolution of roles and partnerships generally require long, constant perseverance over several years. In addition, Johnny Bradberry (Louisiana DOT) felt that these changes must begin internally. “We ask the people involved in these processes what needs to change to compete in today’s building model.” Harold Linnenkohl (Georgia DOT) remarked that he found the same to be true in his organization. “We had a lot of internal work to do. We made our people the focus, and now, each employee knows that he or she is part

of the department and not just someone who pushes paper.”

“Really understanding the underlying relationships in which DOTs are involved is not what our engineers do,” added Tom Norton (Colorado DOT). “They can take the process to a certain point, but that’s where we stop and communication breaks down.”

Customers and Stakeholders

There was much discussion on the need to change the way DOTs communicate. “Part of our challenge is translating engineer-speak into something the public can understand,” Tim Martin (Illinois DOT) admitted.

Rina Cutler (Pennsylvania DOT) agreed. “Engineers are not taught the kinds of skill sets required today to deal with communities and partners. They are not taught negotiation, mediation or conflict resolution, and they are not taught politics.”

As a result of this communication deficiency, stated Will Kempton (California DOT), “We do not relate [our message] in a way the public can understand. Currently, we do not sell what we do effectively.” He has challenged all his employees to adopt a “cultural change” toward customer service, efficiency, and partnerships. Today, he said, “we talk about changing the department from a transportation bureaucracy to a mobility company.”

Julie Lorenz (Kansas DOT) then suggested the need for DOTs to recast themselves and market their departments as a private company would. “It’s not that our product is picking up trash. We’re a mobility company, and we have to recast what it is we are selling in that light.”



Julie Lorenz



Christine Johnson



Joe Toole

“Part of our challenge is translating engineer-speak into something the public can understand.”

— Tim Martin



John Njord



Gordon Proctor



Nick Mandel



Frederick Wright

“We do sometimes think our product can speak for itself,” Joe Toole (FHWA) conceded, “but what company works that way? We think what we are producing is important, but the larger message is that we are a partner with the public, we are listening, and we care about the things they value.”

According to Christine Johnson (FHWA), one of the biggest problems is that DOTs do not operate as an industry to communicate with people. She cited the example of the milk industry coming together with a united, single message. “They accomplished a great deal with two words: *Got Milk?* We need to think about communicating our message together, nationally.”

Allen Biehler (Pennsylvania DOT) liked the idea of building a national campaign to promote the transportation industry, but warned that in doing so, DOTs would need to be consistent and sustainable in spite of their often changing leadership.

Julie Lorenz (Kansas DOT) also agreed with the national campaign concept and added her own cautionary words. “If we come out with a strong, national message, then we have to be sure we can deliver.”

“We do have to promise what we deliver and deliver what we promise,” Rick Capka (FHWA) acknowledged. “But it’s also about managing expectations—not spin doctoring. We need to let the public know what is

reasonable to expect, and then deliver it.”

Another part of communicating is showing the public the economic value of transportation in relation to the quality of life in a “real common sense kind of way,” Tom Norton (Colorado DOT) explained. “Much of the research we do and TRB does is so academic and so unreal that it never gets us to where we want to go. We are not good at talking about what transportation means to people.”

The discussions then evolved into the notion of building credibility. “Not many other state agencies deliver a product in the way DOTs do,” explained John Njord (Utah DOT). “In doing so, we make deposits into our credibility account—nickels, dimes, pennies, and at times, larger denominations. We can spend that credibility wisely if we do it appropriately.”

To that end, Johnny Bradberry (Louisiana DOT) described his challenge with building credibility. “Approximately 90 percent of our construction is done by contractors, but guess who gets the phone call when cones aren’t in the right place? How do you build credibility with the public through a contractor that seems to ignore some of these things?”

“We developed 62 performance measures, documented them, and then documented that we had managed them well,” Gordon Proctor (Ohio DOT) offered. “This inoculated us against basic assumptions that we were not effective or were inefficient.”

Ruben Anthony (Wisconsin DOT) reminded participants that credibility also means being the experts. “Our continued expertise



is something the public expects. We need to make sure that when opportunities come up, we give the young engineers the tough jobs. If we don't get young experts working on difficult projects, we can't maintain the expertise the public expects."

This led to several comments related to the aging, and some would say diminishing, talent pool within DOTs. "If we want to hire a consultant, we know exactly what talent is available. But as we deal with our own people, we don't know that information," Mn/DOT's Doug Differt explained. "When we start talking about research, we need to find what expertise and talent we have and how to use it, and then find out what we don't have."

"It is hard to retain the engineering experts and others with experience," Nick Mandel (New Mexico DOT) added. "Perhaps we need a marketing campaign to tell people that they can do a lot more if they work at a state DOT rather than work in the private sector."

Funding and Finance

The issue of credibility evolved into discussion about the various political challenges. For example, Michael Bridges (Louisiana DOT) pointed out that even if a DOT has credibility, "If you don't pay attention to [political] cycles, it can really mess you up. We have an election in the fall of 2008, and if we time things wrong, the politicians will not support us. When we mention taxes or tolls to them, they will back off if it's not right for them."

"We engaged and educated our stakeholders extensively as we updated our master plan and created an overall awareness of the disparity between needs and revenue," Robert Sack (New York State DOT) added. "Somewhere in that process, we did get a bond passed, and found that timing is critical."

Nancy Richardson (Iowa DOT) agreed that timing is important. "We're worried about the politics of it, too. We're almost afraid we'll have everyone in the same party back in January, and that may dampen our efforts [to get a fuel tax increase passed]."

Mark Wolfram (Wisconsin DOT) then

"By October 2008, Congress will have to either cut the federal highway program or find a way not to. That will have a domino effect throughout the rest of the system."

— John Horsley

noted, "We rely heavily on the fuel tax, and when we explained that an increase would be less than the cost of a [McDonald's] Happy Meal, that didn't cut it. We need to talk about why [a fuel tax increase] is a good idea, and then work with other states on delivering this message, so it doesn't seem like we're the only state doing this."

One state that has approved a gas tax increase is Ohio. Gordon Proctor (Ohio DOT) described what made it happen. "Four years of establishing efficiency, effectiveness, and credibility made it all very simple," he said. The department used performance measures to demonstrate that although its current plans were on track, a crisis was imminent without capital expansion. Legislators accepted the system's logic. "They realized that if we say we need more money for guardrail, ... we need more money for guardrail." Timing is again important. "My point: get the efficiencies done, and then ask for money."

Finally, participants mulled over the future of federal transportation funding. Frederick "Bud" Wright (FHWA) acknowledged that the level of federal-aid funding is not sustainable in the current tax structure. "The percentage of total investment for transportation is declining, and we can't take it for granted we will see an increasing federal program."

John Horsley (AASHTO) then added, "We build our programs based on what we think we will get from the federal government. But, we won't be able to count on the federal government the way we have in the past. By October 2008, Congress will have to either cut the federal highway program or find a way not to. That will have a domino effect throughout the rest of the system. As an aggregation of states, we cannot accept the premise that the federal government will completely walk away from the table. As an association, we can't allow this system to collapse."



Michael Bridges



Robert Sack

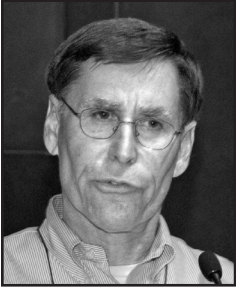


Nancy Richardson



Mark Wolfram

Forum Summary



Lance Neumann

“There is a rich set of lessons to learn from in terms of strategies that work for increasing revenue and resources for transportation at a state and/or local level. Part of that is making sure you are credible and can make the case that you are good stewards with existing funds.”

— Lance Neumann

At the end of the conversation circle discussions, Lance Neumann, president of Cambridge Systematics, summarized the key themes he heard. “If we want to strengthen partnerships, the work starts at home,” he reported. “It seems that unless we do the internal work first, we won’t be successful at developing the partnerships we need to be successful.” He noted further that there are many types of partnerships that may require many different actions and strategies. “All partners aren’t the same, and our relationships with all partners are not the same. Not only do we need to be concerned with our partners’ needs, but also we need to educate them as to what our needs are. It’s a two-way process, and the partnership has to be co-equal.”

One particular partner that received much attention was the contractor/construction industry. “There is a sense that we need to engage with this critical partnership group and make sure there is a clear understanding of the common needs and interests, but at the same time, recognize that we are in this for slightly different reasons.”

Another observation Neumann discussed related to communication. “What message are we delivering and what is the impact? How do we communicate to the unwashed masses? We have to get out of our professional expertise blinders and recognize that what is so obvious and intuitive to us is not resonating. We need to think about more innovative ways of translating what we know is the important part of the transportation program to folks who are not involved in our business, and bring in a whole new skill set to help us craft and deliver that message.”

Next, he talked about the mobility corporation, a concept used throughout the discussions, as it relates to skill building. “If we are moving to successful mobility corporations, we need to develop political skills since we are involved in a political process. Technicians may not understand that process. We also need to restock, build, and sustain strong and deep technical skills, because our credibility as transportation leaders depends on

this full range of skills.”

There was much discussion around the connection between transportation and economic benefits. “We all think this connection is critical to make the case of transportation, yet it is frustratingly complicated to deliver that message in a way that’s practical and understandable and reflects the interaction between transportation and the economy,” Neumann said. “Let’s not repeat the research we’ve already done, but let’s think about what it will take to bring research into practice in a much more effective way than we have in the past.”

Neumann next brought up a range of ideas discussed that were collectively described as “small wins.” “These are the nickels and dimes in our credibility bank,” he said. “There also were some big opportunities mentioned and other great examples of how to build credibility with our customers and stakeholders. It also was mentioned that doing well on one project, and then sliding back on six or seven other projects, is not going to cut it. If we can figure out how to build credibility, great, but we need to sustain it.”

Finally, Neumann offered his “high-level impressions” of the funding and finance discussions. “There is a rich set of lessons to learn from in terms of strategies that work for increasing revenue and resources for transportation at a state and/or local level. Part of that is making sure you are credible and can make the case that you are good stewards with existing funds. We also need to articulate the erosion of the buying power we have now. This is not an easy message to communicate, but certainly, it is an important one. And, we also need to pay attention to what is happening at the federal level. No matter what direction things go, it will have an impact on states.”

Implications for Sponsors

Next, Larry King, deputy secretary of the Pennsylvania DOT and chair of the NCHRP 20-24(51) panel that oversaw the planning of the forum, moderated a panel discussion with representatives from the three event sponsors. J. Richard Capka, FHWA administrator; John Horsley, AASHTO executive director; and Robert Skinner Jr., TRB executive director, each provided their reactions to the day's discussions.

FHWA

"One of my observations from our discussions is that there is a lot of commonality in experience," Capka began. "There didn't seem to be a lot of unique pockets of experience, but rather, a lot of shared experience from which we can all benefit."

"When we talked about the mobility corporation," he continued, "I interpreted that to mean that we are a team of teams. I think that is important for us all to keep in mind, because no one agency, no one level, or no one team member within the team can do something in isolation. If we are not careful, and we take actions without a lot of team thought, we can have unintended consequences."

Communication was one topic of discussion that "jumped out as being important," Capka noted. "We need to tell our story clearly to the public, no question about it, and we need clear images of what the definition of success is." With regard to internal communications, Capka observed that there are many lessons learned. "We need to pool together the information that's out there so someone with a challenge can pull it up, rather than disseminating information with more of a 'push' process."

It also is essential to be able to respond to a crisis, he added. "The public expectation of us is that we will be successful, and successful in a grand way. So, managing expectations is very important and requires some planning. Part of this is being willing to manage in a fish bowl, so that good things and bad things are evident and that we address both."

Capka felt the finance/funding topic yielded a good dialogue, and he reminded

participants that a national commission is working to address this issue. "As we look into the future, it's not just about funding and how much is coming from the federal level, but what is the federal role, what is the national interest, and will that define what the federal participation will be? I don't know the answer to that question, but it's certainly been raised at the commission level, and they are scratching their heads over this as well," he explained. "As we move away from being entirely dependent on public funds, there perhaps should be a blending of public-private sector funds. We need to look at the skill sets we have available and how we bring those skills on board to help us be successful in this new environment."

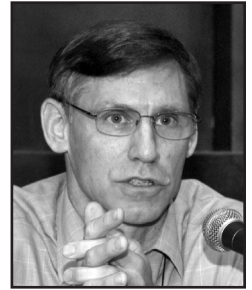
AASHTO

Next, Horsley offered his thoughts, declaring, "The way we did business just eight years ago doesn't work today. We need to go outside of the skill mix we normally have on staff and bring in outside people to help us communicate and at least get those out in the field on the front line to recognize that they need help communicating, because communication is fundamental to what we do."

He continued, "Many of you are crafting strategies to go to your legislatures to get more resources, and it is clear that you can't succeed there unless you redefine roles and partnerships. The idea of establishing credibility through better communication with customers and stakeholders also is fundamental to success."

Further, Horsley added, "We have to do better at communicating to our federal representatives and give them credit for the projects we're building with the resources they made available. We ask them to take tough votes, and if we begin now to give them credit when we open a new road or make a safety improvement, it will help."

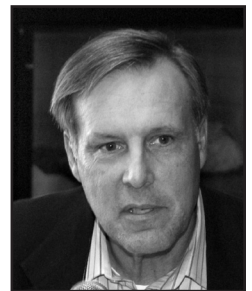
He next described some of the things he believes AASHTO needs to do to respond to what was discussed. "We already offer a new CEO orientation program. But perhaps we need to go beyond that to offer something



Richard Capka



John Horsley



Robert Skinner Jr.

“We must reach out beyond our membership and get an industry-wide consensus on what the country needs, what the federal role should be, and so forth, and get the best minds in the country engaged in that discussion.”

— John Horsley

more in-depth. There is so much knowledge and innovation to be shared with new people who will come on board, and we need to transfer these lessons to the new leaders.”

“The other challenge,” he added, “is how do we get the good information from case studies out there in more usable and accessible format? Somehow, these case studies need to be available online. Maybe we can help states with legislative studies and partner with the National Conference of State Legislatures (NCSL) to produce them. There are good models out there on how to produce revenues and structure programs; maybe we could offer this information to our members.”

He also observed a great need to better articulate a vision for transportation in the United States. “We must reach out beyond our membership and get an industry-wide consensus on what the country needs, what the federal role should be, and so forth, and get the best minds in the country engaged in that discussion. The question is, how do we do it and do it well? Just as communication is essential to what each of the states is doing, we need that at a national level, and that’s what we’re in the process of doing.”

TRB

Skinner concluded the session with his thoughts, particularly on the research piece of the discussions. “To simplify things,” he began, “let’s think of research as either aiming for information or technology. Information is what we’ve talked most about here. There are several kinds; the first is what I would call management science. It’s akin to what business schools do to help corporations run better. If this was science in the way that physics is science, all the corporations would be making money, but it’s not that kind of

science,” he explained. “It’s a very squishy, social science. We’re trying to figure out how we energize DOTs; how do we adapt to a constantly changing context? The second area is performance measurement; this is not so squishy. We can measure performance better than we have ever before. If we can give real-time travel information to travelers, then we can accumulate things like a Dow Jones average of performance in the regional highway system yesterday. Users could compare that average with the day before and the day before that. We have a whole new set of opportunities if we choose to pursue it.”

Next, Skinner directed his comments to policy research, pointing out that there are some pitfalls in this type of research, several of which were alluded to throughout the discussions. One of them is the problem of repeating the same kinds of research projects. “I’ve seen in our cooperative research programs that, because they are often run by people who are managers and policymakers, they want research on topics where they really want the answer. The only problem is that it’s hard to get that answer. Coming up with the relationship between transportation and land use is nearly impossible, but wouldn’t it be nice to have? Wouldn’t it be nice to have in crisp, simple terms, the economic value of the investments you’ve made in your transportation system? It would be nice to have this information, but it’s terribly difficult to get. We have to have realistic notions of what we can and can’t do. How do you deal with conventional wisdom in policy research? When we do policy research, let’s not close doors prematurely. Let the people who will make the policy close those doors, but for now, let’s keep the options as wide as possible, let’s give some choices in the policy work.”

Working Groups

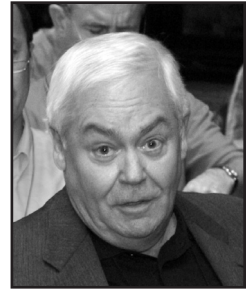
The final day of the forum began with a large-group brainstorming session in which participants offered ideas for research, training, and information activities.

Participants next broke into four working groups to develop research and action plans. The groups and their facilitators were:

- Roles and Relationships: Hyun-A Park, Spypond Partners; Rina Cutler, Pennsylvania DOT
- Customers and Stakeholders: Ted Poister, Georgia State University; Katherine Turnbull, Texas Transportation Institute, Texas A&M University
- Funding and Finance: Craig Secrest, TransTech Management, Inc.; Frankie Giles, Virginia DOT
- Crosscutting Issues: Robert Johns and Cheri Marti, CTS, University of Minnesota

The four groups came up with 22 specific draft action plans, detailed on pages 14–19. The sponsoring organizations, starting with the NCHRP 20-24 panel, will consider these actions for funding and implementation.

Larry King, NCHRP 20-24(51) panel chair and PennDOT deputy secretary, gave concluding remarks for the forum. He gave a “benediction” to participants, encouraging all to “feel good for what happened in the space of 48 hours.” He noted that the forum presentations, along with this summary report, will be housed on the AASHTO Web site: www.transportation.org/meetings/CEOLeadership.



Larry King



Action Plans

ROLES AND PARTNERSHIPS

A.1 Develop Case Studies of State DOT Performance-Based Asset Maintenance Contracts

Description: In-depth analysis of the recent (past seven years) experience with performance-based asset maintenance contracts (PBAMC):

- Include scope, form of procurement and contracting, cost-benefit analysis, performance measurement, impact on state DOT roles, and understanding of different stakeholder views.
- Use case studies from Virginia, Florida, Tennessee, North Carolina, District of Columbia, Texas, and one Canadian example.
- Develop scope for a domestic scan.
- Assess pros and cons of outsourcing maintenance vis-a-vis sustainable maintenance workforce.
- Examine the development of a new competitive industry for PBAMC.
- Consider applying lessons learned to other DOT service areas.

(Note: Build from current synthesis on this topic.)

Goals: Practical mechanisms that interested states can use to evaluate and implement similar programs. Improve industry and state practice in PBAMC.

Desired products and outcomes:

- Detailed/actionable case studies
- Tools and resources that allow DOTs to make better decisions about PBAMC

Suggested roles (AASHTO, FHWA, TRB): NCHRP Study

A.2 Produce Guidebook for Public/Private Partnership (PPP) Implementation

Description:

- Compile existing best practices.
- Review instruments that have been developed and translate into guidebook components (project nomination and screening process, standard contract documents, QA/QC requirements, dispute resolution process, standardized toll technology, conflict of interest guidelines, management tools, etc.).
- Capture Texas DOT experience.

Goals:

- Provide state DOTs that are institutionalizing PPP with process, procedures, and resources for efficient program-level management.

Desired products and outcomes:

- Practical resource/tools and guidance for institutionalizing PPP
- Good decisions and minimized soft-cost and time of implementation

Suggested roles (AASHTO, FHWA, TRB): NCHRP Study

A.3 Explore Federal, State, and Local Roles to Facilitate the Transformation of State DOTs into 21st-Century Mobility Companies

Description:

- Develop or refine the state, federal, and local transportation and other agency roles in the concept of being the lead in mobility.
- Consider and give ideas in areas such as safety, reliability, economic growth, and environmental sustainability.

Goals:

- Hold national forum on the role of state, federal, local agencies, and other partners to provide mobility.
- Identify partnership roles as a roundtable topic for discussion at the Safety Forum in February.

Desired products and outcomes:

- Clear articulation of the future federal, state, and local roles. Adoption of roles by appropriate national organizations.
- Input to the SAFETEA-LU Commission on roles.
- Best practices of successful partnerships of state strategic safety plans.

Suggested roles (AASHTO, FHWA, TRB): AASHTO lead using NCHRP funds to pull together all national organizations such as NGA, NACO, AAA, ATA, IACP, AMPO, NLC, AGC, and ARTBA

A.4 Changing a Culture—Compile Best Practices of Change Management in State DOTs

Description: Identify best practices for how state DOTs have managed change in their organizations.

Goals:

- Produce case studies that capture successes for effective change.
- Identify successful methods used by states to evaluate the effectiveness of change.

Desired products and outcomes:

- An applicable synthesis with resources

Suggested roles (AASHTO, FHWA, TRB): NCHRP Study

A.5 Develop Successful Tools for Growth Management (Guidebook)

Description: Develop best practices by state DOTs on influencing local land use decisions.

Goals: Be able to incorporate long-term transportation considerations into effective growth and land use decisions.

Desired products and outcomes: Identification of successful models that other state DOTs could adopt as a best practice guide.

Suggested roles (AASHTO, FHWA, TRB): Development of an NCHRP guide

CUSTOMERS AND STAKEHOLDERS

B.1 Determine Approaches for Building and Sustaining Customer Credibility

Description: Determine, implement, and monitor effective approaches for state DOTs to build and sustain credibility with stakeholders.

Goals: Provide tools and techniques for use by state DOTs to assist in building and sustaining credibility with stakeholders.

Desired products and outcomes:

- Phase I – Create a portfolio of successful practices for developing and sustaining credibility with state DOT stakeholders, including examples that can be used by other states. The portfolio would be available on the Web and in a report. It would be publicized and distributed through conferences and meetings. A workshop could also be developed and presented to highlight use of the portfolio examples.
- Phase II – Develop a program of research that identifies factors that affect public perception of state DOT credibility. Execute the research program as appropriate, including monitoring the results of current and new state programs. The research results would be summarized in reports and on the Web and would be presented at conferences and meetings. The results would also be used to update the portfolio, as needed.

Suggested roles (AASHTO, FHWA, TRB):

- TRB – Fund development of the portfolio through NCHRP Synthesis program. Fund development and conduct Phase II research through NCHRP. Disseminate the results at TRB conferences, meetings, and online.
- AASHTO – Assist with dissemination of information at conferences, meetings, and on the Web.
- FHWA – Fund development of workshop.

B.2 Document and Disseminate Successful State DOT and State Legislative Interaction

Description: Document and disseminate case studies of effective practices to engage and inform state

legislators in supporting state DOT funding and policy goals.

Goals: Enhance state DOTs' ability to develop and sustain good relationships with state legislators to achieve funding, policy, and project goals.

Desired products and outcomes:

- Synthesis of best practice case studies of effective engagement and interaction with state legislators to achieve state DOT funding, policy, and project goals.
- Workshop with National Conference of State Legislatures (NCSL) transportation committee.
- Ongoing peer-to-peer exchange among legislators and legislative aides in different states facilitated by state DOTs.

Suggested roles (AASHTO, FHWA, TRB):

- TRB – NCHRP synthesis of effective state DOT and state legislative interaction
- AASHTO – Workshop with NCSL and peer-to-peer exchange

B.3 Provide Portfolio of Marketing and Communication Practices to Inform the Public About the Benefits of the Transportation System

Description: Provide information on the use of marketing approaches to proactively recast the public's perception of the transportation services and products delivered by a state DOT and its partners.

Goals: Provide state DOTs with a portfolio of marketing and communication practices, techniques, and market analysis to assist them in effectively reaching out to the public and formulating a message that resonates with their values.

Desired products and outcomes:

- Portfolio of successful practices and techniques, including examining the authority necessary to conduct these practices.
- Research study to analyze information on campaigns, including identifying elements that may be applicable to alternate audiences and stakeholders.
- Pilot and monitor programs.
- List of possible marketing resources that state DOTs can use.

Suggested roles (AASHTO, FHWA, TRB):

- TRB-NCHRP synthesis-portfolio of successful practices and techniques. NCHRP research study on analysis of information campaigns and monitoring programs.
- AASHTO – Disseminate portfolio and research study results. Develop and disseminate list of available marketing resources.

B.4 Examine and Improve the Use of Transportation Customer Satisfaction Measures

Description: Conduct research to examine the use of customer satisfaction measures with different transportation segments, including the traveling public, transit riders, truckers and shippers, and other groups.

Goals: Improve state DOTs' performance related to key user satisfaction measures.

Desired products and outcomes:

- Synthesis of current practice related to the collection and use of facility user satisfaction data, including identification and discussion of specific performance measures in use by individual states for different facility and service user groups.
- Research study on how to improve the design, administration, and analysis of specific techniques/tools to determine key expectations of different user groups and to monitor and assess customer satisfaction. Conduct workshop on use of tools and techniques.

Suggested roles (AASHTO, FHWA, TRB):

- TRB – NCHRP synthesis and research project. Assist with dissemination of results.
- AASHTO – Assist with dissemination of synthesis and research study.
- FHWA – Sponsor workshop.

B.5 Assess Traveler Response in Order to Improve Real-Time Traveler Information

Description: Determine how real-time traveler information provided by state DOTs and other groups affects travel behavior, assess method to use this information to measure system performance for DOTs and travelers (e.g., DOW Jones Average), and assess the best methods to disseminate real-time information to travelers and other users of the system and performance measures to stakeholders.

Goals: Enhance the experience of the traveling public and other system users through the provision of useful real-time travel information, to enhance system performance through the use of real-time information, and to provide ongoing measurement of system performance to stakeholders.

Desired products and outcomes:

- Research study to assess traveler response to the availability of real-time information.
- Research study to assess state DOTs' use of this information to operate the system more effectively, and methods to improve future deployment through advances in technology.
- Research study on developing system performance measures from real-time data for use by state DOTs and to share with stakeholders.

Suggested roles (AASHTO, FHWA, TRB):

- NCHRP studies, FHWA ITS program projects, or pooled-fund study
- Disseminate research results through TRB and AASHTO conferences, workshops, meetings, and Web sites.

FUNDING AND FINANCE

C.1 Quantify and Articulate the Benefits/Costs of Making/Deferring Transportation Investments

Description:

- Phase 1 – Conduct research that develops a standardized methodology/framework for quantifying and reporting both economic and quality of life impacts, by state, of both preservation/stewardship and capacity transportation system investments.
- Phase 2 – Support the application of the methodologies and/or conduct an analysis in each state to develop state-specific data on the economic impacts of transportation investment.

Goals:

- Establish a standard methodology for measuring and reporting transportation benefits and costs at the state level.
- Develop practical, understandable state-specific information about economic and quality of life impacts of transportation investments.
- Provide benefit data to help customers understand the value of transportation to their lives and build advocacy for transportation investment.
- Create benefit/cost data/information to assist in making sound transportation investment decisions and to support transportation funding/financing initiatives.

Desired products and outcomes:

- Standardized methodologies for collecting and articulating state-specific benefit/cost data.
- A forum for disseminating standardized benefit/cost methodologies to states.

Suggested roles (AASHTO, FHWA, TRB):

- TRB research project
- AASHTO dissemination

C.2 Prepare Guidebook for Best Practices in Cash Flow Management

Description: Best practice research and guidance on policies, practices, tools, and systems to support the use of advance construction and bonding, and the management of fund balance levels.

Goals: Identify best practices in these areas and share the information with USDOT and state DOTs.

Desired products and outcomes: Guidebook that documents best practices and provides guidance that states can use in developing processes for managing

cash flow from programming to construction phases of project/program delivery.

Suggested roles (AASHTO, FHWA, TRB): Refer to appropriate AASHTO Committee (SCOFA) to define further actions.

C.3 Analyze Effects of Hyperinflation on State DOTs

Description:

- Collect state-by-state information on project cost inflation.
- Document how inflation is affecting state programs and how states are dealing with these impacts.
- Estimate long-term inflation trends.

Goals:

- Provide up-to-date, state-by-state, and regional information on capital construction cost increases and document their impact on program size.
- Estimate short- and long-term increases.
- Establish better guidance on how states should adjust programs in response to changing inflation estimates.

Desired products and outcomes:

- National clearinghouse on project/program inflation information.
- Development of short- and long-term inflation estimates.
- Guidance to states on how to adjust 1) project estimates; and 2) programs.

Suggested roles (AASHTO, FHWA, TRB):

- AASHTO role to collect data.
- FHWA to give guidance.

C.4 Provide Information Through a Clearinghouse on State DOT Funding

Description: An ongoing initiative to collect and disseminate current information on state funding sources, rates, and levels.

Goals: Provide up-to-date and reliable information on state funding sources, rates, and levels.

Desired products and outcomes: Online resource for up-to-date information on state funding sources, rates, and levels.

Suggested roles (AASHTO, FHWA, TRB): FHWA to collect, maintain, and publish (use FHWA Web site).

C.5 Conduct Research on State DOTs' Experiences with Transportation Funding Initiatives

Description:

- Research on state DOT experiences (successful and unsuccessful) in developing and implementing transportation funding and financing initiatives.

- Case studies that identify unique considerations (e.g., statutory constraints, etc.); lessons learned that are transferable; means for demonstrating agency efficiencies; roles of champions; leadership models; ways to make the case in response to fiscal crises; and roles of independent bodies such as state commissions.
- Describe approaches (successful and unsuccessful) to the marketing of funding and financing measures to stakeholders, elected officials, and the public.

Goals:

- Define best practices and lessons learned with respect to state DOT funding and finance initiatives.
- Develop guidance on effective state DOT use of marketing services, media, and resources.

Desired products and outcomes: Guidebook highlighting case studies, lessons learned, and best practices.

Suggested roles (AASHTO, FHWA, TRB): NCHRP Study

C.6 Document Experiences of Special State Commissions on Transportation Revenue and Financing

Description: Document state experiences (successful and unsuccessful) in utilizing independent bodies to identify transportation program needs, funding gaps, and revenue options.

Goals: Identify the most effective approaches for building stronger political consensus on state transportation revenue and financing initiatives.

Desired products and outcomes:

- Research report documenting case studies and lessons learned.
- Online library of special commission reports.

Suggested roles (AASHTO, FHWA, TRB): NCHRP Study

C.7 Conduct Research on Implications of Mileage-Based (VMT) User Fee Systems

Description: Explore the policy, administrative, and implementation issues and options associated with development and deployment of mileage-based (VMT) user fee systems at the state level.

Goals: Identify political and programmatic implications of VMT user fee systems for state DOTs.

Desired products and outcomes:

- Research report that assesses options and directions for a new user fee structure and provides guidance on how states could proceed.
- A forum to present and discuss the research findings.

Suggested roles (AASHTO, FHWA, TRB): AASHTO/TRB/FHWA sponsorship

CROSSCUTTING

D.1 Develop Resources for State DOT Leadership Development—CEOs

Description: Develop resources and clearinghouse to assist state DOT CEOs in identifying and addressing critical issues.

Goals: Create a variety of forums and approaches for information exchange and resource development.

Desired products and outcomes:

- Periodic Webcasts/conference calls on key issues
- Summary documents on key issues and approaches (e.g., four-page/glossy, etc.)
- Newsletter on management issues of CEO interest

Suggested roles (AASHTO, FHWA, TRB): AASHTO/FHWA create facilitator/resource center to develop and support CEO leadership development initiative.

D.2 Develop Resources for State DOT Leadership Development—Senior Executive Staff

Description: Develop resources and clearinghouse to assist state DOT senior executive staff in identifying and addressing critical issues.

Goals: Create a variety of forums and approaches for information exchange and resource development appropriate for senior executive staff (more in-depth than CEO resources and covering all relevant functional areas).

Desired products and outcomes:

- Periodic Webcasts/conference calls on key issues
- Summary documents on key issues and approaches (e.g., eight-page glossy, etc.)
- Newsletter on management issues of interest
- Take advantage of AASHTO regional meetings to conduct programs focused on senior staff development.

Suggested roles (AASHTO, FHWA, TRB): AASHTO/FHWA take the lead in providing resources to develop, execute, and support an ongoing program of activities.

D.3 Develop Resources for State DOT Leadership Development—Professional Staff

Description: Develop resources and clearinghouse to assist state DOT professional staff in identifying and addressing critical issues.

Goals: Create a variety of forums and approaches for information exchange and resource development relevant and timely for a broad range of DOT staff in different functions. Focus is on timeliness and quick turnaround.

Desired products and outcomes:

- Periodic Webcasts/conference calls on key issues
- Summary documents and white papers on key issues and approaches
- Newsletter on issues of interest to specific areas or

functions

- Take advantage of AASHTO regional meetings to conduct programs focused on senior staff development.

Suggested roles (AASHTO, FHWA, TRB): AASHTO and FHWA take the lead on developing resources and ongoing program support.

D.4 Define the Next Generation DOT: An Integrated Mobility Company?

Description: The context under which DOTs began has changed significantly. A number of DOTs have begun to evolve in response to changing conditions. State DOTs have become more cognizant of and responsive to broader issues beyond merely building the infrastructure. How should state DOTs perform their roles and responsibilities in this new paradigm? What does this new model look like and what are the approaches, methods, and systems that need to be in the new state DOT model?

Goals: Define the next generation DOT as a “mobility company,” for exploration and development.

Desired products and outcomes:

- Short case studies of new evolving models
- National resource pool of organizational change leaders available for consultation to state DOTs
- Identification of new skills DOT staff need to develop and obtain
- White paper or discussion concept that outlines new state DOT model

Suggested roles (AASHTO, FHWA, TRB): All should be involved, plus Chambers of Commerce, AAA, ATA, and other USDOT agencies.

D.5 Develop a Media Campaign to Market Transportation as a National Asset

Description: Develop a fact-based media campaign utilizing proven marketing techniques that communicates the value of transportation to our economic competitiveness and quality of life.

Goals:

- Develop an Action Plan and subsequent timelines.
- Develop core messages/slogans.
- Implement a plan that can be tailored to a specific state's needs.
- Assess effectiveness and improve.

Desired products and outcomes:

- Appropriate slogans—national slogan
- Media campaign
- Increased awareness of the importance of transportation
- Increased understanding of the challenges facing the nation's transportation network

- Demonstration of current effectiveness and efficiency as well as unmet needs
- Willingness to support necessary investment
- Willingness to support consistent, predictable funding options
- Understanding the changing dynamics in play regarding traditional funding options

Suggested roles (AASHTO, FHWA, TRB):

- AASHTO—leadership and funding
- FHWA—data and funding
- TRB—evaluation of the effectiveness

2006 CEO Leadership Forum Participants

State DOT Participants

Ruben L. Anthony Jr., Wisconsin DOT
Allen D. Biehler, Pennsylvania DOT
Johnny Bradberry, Louisiana DOT
Michael Bridges, Louisiana DOT
John Craig, Nebraska Department of Roads
James Currie, Montana DOT
Rina Cutler, Pennsylvania DOT
Doug Differt, Minnesota DOT
Frankie Giles, Virginia DOT
Randy Halvorson, Minnesota DOT
Richard Hogg, Pennsylvania DOT
Tim Horner, North Dakota DOT
Will Kempton, California DOT
Larry King, Pennsylvania DOT
David Leingang, North Dakota DOT
Grant Levi, North Dakota DOT
Harold Linnenkohl, Georgia DOT
Julie Lorenz, Kansas DOT
Nick Mandel, New Mexico DOT
David Marks, Maryland DOT
Timothy Martin, Illinois DOT
Susan Martinovich, Nevada DOT
Paul A. Mattox Jr., West Virginia DOT
Deb Miller, Kansas DOT
John Njord, Utah DOT
Tom Norton, Colorado DOT
Gordon Proctor, Ohio DOT
Pete Rahn, Missouri DOT
Nancy Richardson, Iowa DOT
Robert Sack, New York State DOT
Julie Skallman, Minnesota DOT
Kirk Steudle, Michigan DOT
Larry Tibbits, Michigan DOT
Paul Turman, West Virginia Division of Highways
Max Valerio, New Mexico DOT
Bob Winter, Minnesota DOT
Mark Wolfgram, Wisconsin DOT
Jerry Younger, Kansas DOT

Participants from Sponsoring Organizations

J. Richard Capka, FHWA

King Gee, FHWA
John Horsley, AASHTO
Crawford Jencks, TRB
Christine Johnson, FHWA
Tony Kane, AASHTO
Janet Oakley, AASHTO
Robert E. Skinner Jr., TRB
Tom Sorel, FHWA
Jim St. John, FHWA
Joe Toole, FHWA
Frederick (Bud) Wright, FHWA

TRB Committee Member Participants

Lance Neumann, Cambridge Systematics, Inc.
Hyun-A Park, Spypond Partners
Theodore Poister, Georgia State University
Craig Secrest, TransTech Management, Inc.
Katherine Turnbull, Texas A & M University

Forum Presenters and Staff

Gina Baas, Center for Transportation Studies, University of Minnesota
Lance Grenzeback, Cambridge Systematics, Inc.
Robert Johns, Center for Transportation Studies, University of Minnesota
Steve Lockwood, Parsons Brinckerhoff
Cheri Marti, Center for Transportation Studies, University of Minnesota
Marcy Schwartz, CH2M Hill

NCHRP thanks the members of the NCHRP 20-24(51) Panel for planning and implementing the CEO Leadership Forum:

Larry King, Chair, Pennsylvania DOT
Crawford Jencks, TRB/NCHRP
Anthony Kane, AASHTO
Harold Linnenkohl, Georgia DOT
Susan Martinovich, Nevada DOT
Martine Micozzi, TRB
Gordon Proctor, Ohio DOT
Frederick (Bud) Wright, FHWA



Bill Sammon

The View from Washington

Bill Sammon, correspondent with the *Washington Times*, entertained participants on the opening night of the forum with his political insights and predictions.

White Paper Executive Summaries

Changes in Roles and Partnerships: Toward the 21st Century State DOT

Steve Lockwood, PB Consult

Building Credibility with Customers and Stakeholders

Marcy Schwartz, CH2M HILL

Funding and Finance: Advancing State DOTs from Good to Great Practice

Lance R. Grenzeback, Cambridge Systematics, Inc.

Acknowledgements

This study was requested by the American Association of State Highway and Transportation Officials (AASHTO), and conducted as part of National Cooperative Highway Research Program (NCHRP) Project 20-24. The NCHRP is supported by annual voluntary contributions from the state Departments of Transportation (DOTs). Project 20-24 is intended to fund studies of interest to the leadership of AASHTO and its member DOTs. The report was prepared by Steve Lockwood, PR Consult. The work was guided by a task group, chaired by Larry M. King, Pennsylvania DOT, and included the following members: Harold E. Linnenkohl, Georgia DOT; Susan Martinovich, Nevada DOT; Gordon D. Proctor, Ohio DOT; and David Sprynczynatyk, North Dakota. Agency Liason representatives were: Frederick G. "Bud" Wright, FHWA; Anthony R. Kane, AASHTO; and Martine A. Micozzi, TRB. The project was managed by Crawford F. Jencks, Manager, NCHRP.

Disclaimer

The opinions and conclusions expressed or implied are those of the research agency that performed the research and are not necessarily those of the Transportation Research Board or its sponsors. The information contained in this document was taken directly from the submission of the author(s). This document is not a report of the Transportation Research Board or of the National Research Council.

**The white papers are available for
download on the AASHTO Web site:
[www.transportation.org
/meetings/CEOLeadership](http://www.transportation.org/meetings/CEOLeadership)**

Changes in Roles and Partnerships: Toward the 21st Century State DOT

Executive Summary

Long-term Challenges to the Traditional State DOT Model

A set of long-term structural challenges to state DOT missions, roles, and relationships has become quite apparent. Just since ISTEA, state DOT programs have almost doubled in size and become more complex, particularly in terms of the almost dizzying array of new options to consider in program delivery and finance. The long-term view is especially challenging, as suggested by a set of ongoing studies and initiatives that look to the next 20- to 30-year timeframe. These studies include the *National Surface Transportation Policy and Revenues Study Commission*, the *AASHTO/NCHRP Study of the Future of the Interstate*, as well as USDOT studies of pricing, vehicle infrastructure integration, and performance measures.

Common to these various views of the future is the assumption that progress will depend on a broadened mission, scope, and scale for the surface transportation program. This includes a number of dimensions:

- Dramatic increases in program size
- Greater reliance on private investment and development resources
- More direct involvement in land use and economic development
- Significant congestion management and operations focus
- Incorporation of new technology
- Focus on performance at the regional systems level

Systematic and aggressive pursuit of these objectives implies major changes in the institutional environment. Four are most needed:

- New forms of sharing and reallocating roles and respon-

sibilities among levels of government to rationalize burdens, overcome intergovernmental stovepiping, and improve efficiency and customer responsiveness

- More systematic methods to capitalize on private enterprise resources with prudent risk allocation while still accessing a range of essential special technical, financial, and management support
- Higher levels of coordination across jurisdictions, systems, and modes essential to deliver substantial system-wide congestion management
- Shared communications and data supporting improved coordination, cooperation, and customer access

These challenges cannot easily be met without significant changes in the relative roles and relationships among the key players in the legacy surface transportation institutional environment—such as other state agencies and authorities, local government, and private service providers. At the generic level (see Table 1), these types of changes are familiar:

- Devolution
- Outsourcing/insourcing
- Public-private partnerships
- Collaborative service delivery

What is different today—and even more so in the future—is that changes in roles and relationships are being focused on core state DOT functions, not just peripheral support activities. In some cases, the changes are to clarify responsibilities for service gaps or insufficiencies that are simply absent or fuzzy. In other cases, changes are required to reallocate responsibilities and functions. Adjustments are also necessary to access specialized technical or management

Table 1. State DOT Roles and Relationship Strategies				
Type of Change	Objective	Strategy	Mechanism	Duration
Devolution	Rationalize multiple roles	Intergovernmental reallocation	By law, custom	Permanent
Outsourcing/insourcing	Obtain special skills	Agency contracting	Fee for service	Temporary
Public-private partnerships	Transfer most responsibility & risks for provision	Private sector takes over DOT role	Business arrangement (contract)	Permanent
Collaborative service delivery	Coordinate multiple service providers	Interagency coordination/consolidation	Interagency agreement	Evolutionary

resources. These new relationships are both public-public and public-private. They vary in intent from the temporary and informal to the permanent and formal.

In all cases, the traditional patterns of independence and interdependency among state DOTs and other providers are evolving to improve the level of efficiency and effectiveness in program delivery to customers. The changes implied do not necessarily alter the basic mission of DOTs, but they may shift the function of the DOT away from direct execution toward one that focuses on managing a collaborative effort among a range of cooperating entities—public and private.

Case Studies and Lessons Learned

Within each of the four relationship strategies, examples are given in which state DOTs adopted new roles and relationships in search of improved effectiveness and reduced costs. The case studies reported in this paper—and described briefly below—are indicated in Table 2.

Devolution. The Penn DOT Agility Program has institutionalized trading of maintenance-related responsibilities and equipment between the DOT and local governments. More than a decade of practice and refinement has generated considerable experience as well as tested methods and mechanisms. The program is decentralized down to the county level, with modest headquarters oversight. Standard procedures, aggressive training, work plan development process, and agreement forms are all well worked out and available on a Web site. An aggressive customer satisfaction process is also part of the institutionalization. The concept, methods, tools, and experience provide a wealth of materials for replication.

Outsourcing. In several states, asset management contracts are being let for total facility maintenance—routine, incident-related, preventive, and restorative—over a significant network basis. Evaluation of these early efforts has generated significant controversy, fostered in part by a focus confined to short-term cost savings and excluding the benefits of longer-term performance as well as the hidden DOT risks of inflation, weather, third party damages, insurance, etc. A second generation of contracts now being developed by VDOT incorporates the benefits of experience, including reallocation of risks associated with weather, opportunities for mid-term adjustment, refined outcome measures, and incentives for innovation.

Public-Private Partnerships. States have been using a variety of arrangements to capitalize on private development and investment interest. For the most part, these have been treated as unique projects, challenging state DOT staff with complex procurement, financial, and contracting issues. TXDOT—with a dozen public-private partnership toll projects in various stages of development—has developed a consistent, programmatic process to deal with the array of transactions involved in handling both solicited and unsolicited proposals. The Comprehensive Development Agreement process includes systematic, staged screening of project proposals; standard documents covering terms and conditions, project requirements, standards, and specifications; and an organized dispute resolution process to minimize delay.

Collaborative Service Delivery. Real-time systems operations cooperation among state DOTs, local govern-

Table 2. Roles and Relationship Strategy Case Studies

Type of Change	Cases	Lessons Learned
Devolution	Penn DOT Agility Program VDOT Local Partnership Initiative	<ul style="list-style-type: none"> • major statewide coverage valuable • institutionalized procedures necessary • replicability
Outsourcing/ insourcing	VDOT Asset Management Contracting SCDOT 27 in 7 Program Management Hampton Roads TMC Privatization	<ul style="list-style-type: none"> • impacts core program • establishes new competition • need for cultural alignment
Public-private partnerships	TX DOT CDA Initiative	<ul style="list-style-type: none"> • need for consistent process • value of standardization • impact on staff requirements
Collaborative service delivery	Integrated Corridor Management Vehicle Infrastructure Initiative	<ul style="list-style-type: none"> • sharing of control a barrier • common objectives key • communications mechanism needed

ment, and public safety agencies is in its infancy, with few clear successes. A few states (Minnesota, Arizona, Washington) are moving ahead with integrated corridor development. Key issues that have arisen include agreement on common service policies and related performance measures, the sharing of operational control, the allocation of costs, and privacy issues. Uneven resource availability is also a problem, but may also provide the basis of state incentives toward consolidation.

Crosscutting Lessons

The cases suggest lessons and approaches that could be shared among AASHTO member departments to improve adaptation to new roles and relationships.

- *Real-time interjurisdictional coordination:* Systems operations and some maintenance functions require a dramatically higher degree of collaboration among agencies than that practiced today, including the sharing of control. The reluctance to be held accountable for outcomes reflects recognition of the risks and challenges of such collaboration.
- *Reallocation of risks and responsibilities:* Improved effectiveness can be achieved by shifting responsibilities to private entities that can provide specialized resources and are prepared to take related risks. Public vs. private cost

comparisons can reveal previously hidden differences in performance and true costs.

- *Relinquishing execution in favor of performance oversight:* A focus on managing performance instead of managing people and activities can lead to more effective outcomes and a more efficient use of limited DOT staff resources.
- *Accommodation of other cultures:* Each new relationship—if it is to be satisfactory to all parties, as well as effective—must accommodate conflicting objectives and survive unexpected context variation, personalities, and regime changes, and yet still produce a visible return.
- *Development of relationship management tools:* Leveraging DOT objectives through more extensive and intensive partnerships requires special skills and tools, including methods of ensuring the alignment of objectives, functions, roles, and processes; improved and specialized communications systems among agencies; and appropriate agreement mechanisms, ranging from informal to contractual.

The lessons learned from the case studies reinforce a trend already visible in the state DOT environment, as noted in the literature scan that preceded this paper: “Historically, state DOT decision-making had been conducted through largely internal processes, and the lines of responsibility had been fairly clear. Today,

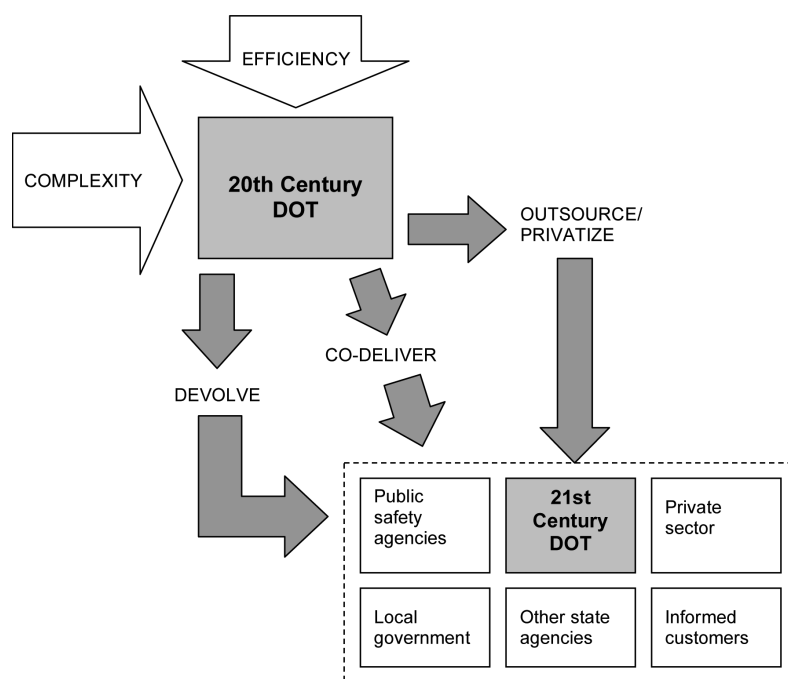


Figure 1. Organizational Transformation to New Roles and Relationships

however, authority for decision-making and the lines of responsibility have become both diffuse and blurred.” Taken together, the range and number of current role and relationship adjustments appear to suggest a broader trend—the transformation of the standard DOT model. The shift is away from a self-contained state agency focused on its own jurisdiction, program, and resources, toward a more collaborative approach in which the agency functions as leader/coordinator/allocator of a network of service providers.

Organizational Transformation: The Networked DOT

As suggested in Figure 1, an array of new roles and relationships would place the state DOT at the center of an emerging matrix of interdependent service providers—public and private, state and local—where the role and relationships will be formed through formal, institutionalized standard procedures and agreements. This loss of direct control must be balanced against the opportunities for improved efficiency and system-wide effectiveness.

Moving toward a network of interdependent roles and responsibilities places a premium on a new set of skills and a new mindset, both at the management and workforce level. It also requires the development and management of a set of formal and informal collaboration mechanisms, as noted in the case studies. In the long run, the ability of state DOTs to contribute to real progress is likely to be directly related to the ability to develop new roles and relationships that improve the effectiveness of this new combination of institutions devoted to transportation infrastructure and services.

Building Credibility with Customers and Stakeholders

Executive Summary

Although Departments of Transportation (DOTs) have discussed customer satisfaction for many years, the topic is more usefully framed as rebuilding credibility with customers and stakeholders. While making customers happy is a worthy goal in and of itself, achieving customer happiness is extremely illusory and unlikely given the broad range of customer and stakeholder interests that often conflict. Credibility differs from satisfaction in that it stems from mutual understanding and respect between the agency and its customers and stakeholders. It acknowledges the duty of government agencies to serve the public and provides a platform for moving forward with DOT funding and program initiatives, such as delivering controversial projects, raising gas taxes, or initiating new financing or project delivery methods.

Elements Contributing to Customer/Stakeholder Credibility

The premise of this paper is that credibility with customers and stakeholders results from a combination of the following four elements:

- Understanding of their needs and priorities
- Information exchange to develop mutually acceptable performance expectations for meeting those needs and priorities
- Organization and delivery of programs to meet performance targets
- Communication of agency program delivery performance to demonstrate accountability

Strategies for Achieving Customer/Stakeholder Credibility

Achieving credibility requires strategies related to most DOT business processes. To focus the discussion and identify case examples, five strategies are presented for building customer/stakeholder credibility:

- Programs driven by customer/stakeholder survey results
- Strategic planning with customers and stakeholders
- Programming based on customer/stakeholder priorities
- Customer/stakeholder involvement institutionalized in

project development

- External communication and education for accountability

Target Groups for Strategy Implementation

These strategies are most successful if they are targeted to particular groups of customers/stakeholders that have been categorized by key issues in which they have a stake. Considered in this way, DOT customers/stakeholders include these major groups:

- **Political sponsors:** people who are responsible for funding DOT programs and whose political futures may be associated with the agency's success or failure. Key stakeholders in this category are governors, transportation commissions, state legislators, and congressional delegates.
- **Locals:** people whose facilities and programs are affected by DOT actions, including mayors, city councilors, county commissioners, local transportation agency officials, local jurisdiction planning and engineering staff, and other transportation agencies.
- **Facility users:** people who use DOT facilities and other transportation facilities. This group includes modal constituents (e.g., automobile and truck drivers, bicyclists, pedestrians, and transit riders), functional constituents (e.g., commuters, freight operators, business travelers, shoppers, and recreational travelers), and special populations (e.g., physically challenged, elderly, and children).
- **Businesses:** people who depend on DOT and other transportation facilities for movement of goods, customers, and employees to and from their locations.
- **Media:** people who report to the public on DOT activities and who shape public opinion, including print, television, radio, and electronic media.
- **Transportation industry:** people whose jobs are affected by DOT activities, such as contractors, construction workers, university researchers, and transportation/engineering consultants.
- **Advocates:** people who have particular perspectives about how transportation funds should be spent, such as advocates for environmental stewardship, smart growth, or government efficiency.

- **Taxpayers:** people who pay taxes to support government operations. This stakeholder group simulates the “general public.”

of program institutionalization within the organization. The aim was to choose programs that were introduced and enhanced over a period of years rather than “one time” innovative activities or new practices that have yet to be fully integrated into organization operations. Table 3 matches suitable strategies for particular customer/stakeholder groups and indicates the strategies and customer/stakeholder groups to which the various case studies apply.

Case Studies

Eleven case studies presented in the paper highlight exemplary DOT programs that address the challenges, barriers, and opportunities faced by DOTs. These programs (listed below) are also potentially transferable to other DOTs.

- Pennsylvania DOT Maintenance Surveys
- Florida Service Improvement Survey
- Michigan DOT Statewide Summit
- Nebraska Department of Roads Safety Summits
- Minnesota Public Involvement in Program Development
- Montana DOT Performance Programming Process
- Missouri DOT Planning Framework
- Maryland DOT Context Sensitive Solutions Program
- Florida DOT Efficient Transportation Decision Making
- Virginia DOT “Dashboard”
- Washington DOT Transparency in Communication

Common Themes from Case Studies

Implementation Requires Strong Leadership and Sustained Effort

To be credible, DOT performance measures must relate to customer/stakeholder ideas about what is important. DOTs must set the measures by working together with stakeholders and customers to create a shared understanding of expectations. Delivering projects and programs that meet the measures and communicating this success to demonstrate agency accountability are essential. Integrating these elements across many business processes within an agency requires effective top-down leadership.

An important factor for selecting case studies was the extent

Table 3. Suitable Strategies for Particular Stakeholder Groups						
Stakeholders	Strategies					DOT Case Studies
	Market Research	Strategic Planning	Programming	Project Development	External Communications	
Political Sponsors		✓	✓	✓	✓	Florida, Michigan, Nebraska, Montana, Missouri, Virginia, Washington
Local Officials and Staff		✓	✓	✓	✓	Florida, Michigan, Nebraska, Minnesota, Missouri, Virginia, Washington
Facility Users	✓			✓	✓	Pennsylvania, Florida, Minnesota, Montana, Maryland, Virginia, Washington
Businesses	✓	✓		✓	✓	Michigan, Maryland
Media			✓	✓	✓	Virginia, Washington
Transportation Industry		✓		✓	✓	Michigan, Nebraska, Virginia, Washington
Transportation Advocates		✓			✓	Michigan, Nebraska, Maryland
Taxpayers	✓				✓	Pennsylvania, Florida, Virginia, Washington
DOT Case Studies	Pennsylvania Florida	Michigan Nebraska	Minnesota Montana Missouri	Maryland Florida	Virginia Washington	

Rapid turnover of DOT leadership creates both opportunity and barriers. While new leadership can provide for new initiatives, sustained effort over a number of years is necessary to reap internal and external benefits from use of the strategies. Consistency over time leads stakeholders to accept a DOT's sincere intention and demonstrates to staff that the effort is worthwhile, as exemplified by the Washington and Virginia case studies.

Customer/Stakeholder Engagement Yields Different—and Better—Results

The case studies indicate that bringing diverse constituencies together can yield dramatically different results than consulting only with the “usual suspects.” Stakeholder involvement can help establish unconventional performance measures that touch the real concerns/needs of stakeholder groups. Broad-based stakeholder outreach builds understanding between a DOT and interest groups as well as among the various interest groups. This approach resulted in safety legislation in Nebraska, changed programming priorities in Minnesota, implementation of controversial projects in Maryland, and better project planning decisions in Florida.

Implementation Requires Internal Discipline

Instituting change in a DOT's management systems requires organizational discipline and perseverance—often in the face of considerable internal conflict. Allowing stakeholders to participate in transparent programming decisions requires changes in staff attitudes and trust in the process, as evidenced in Missouri and Montana. Revamping project planning and development processes requires a heavy allocation of staff resources, as evidenced in Maryland and Florida.

Strategy Implementation Tends to Affect Other Business Processes

Successful first efforts in any one of the strategies tend to “spill over” and spawn use of the other strategies. This allows leveraging of stakeholder networks and extension of credibility into other DOT business processes. Successful use of stratified market research in Pennsylvania, for example, resulted in use of the information to drive programming priorities. Programming experience with regional work groups influenced the restructuring of Missouri's long-range planning program to include broader public outreach.

Implications for the Future

Many of the case studies suggest that strategy implementation often requires changes in business processes. New performance measures designed to reflect customer/stakeholder priorities may necessitate new data gathering, analysis, and management processes. Parallel changes likely will be needed in organizational competencies. Implementation of any of these strategies requires expertise in areas such as market research, public involvement, process design, communications, and asset management.

Funding and Finance: Advancing State DOTs from Good to Great Practice

Executive Summary

This paper summarizes trends, issues, and best practices in state DOT funding and finance. The paper was commissioned by the American Association of State Highway and Transportation Officials (AASHTO) as one of three briefing papers for the 2006 CEO Leadership Forum in Minneapolis, Minnesota, on September 24-26, 2006. The work was funded through the Transportation Research Board's NCHRP Project 20-24(51).

In 2004, the latest year for which complete data are available, federal, state, and local governments collected \$168.2 billion in transportation revenues. By 2007, federal, state, and local government will be collecting an estimated \$188 billion in revenue. However, the total will be \$55.1 billion short of the level of spending needed to “maintain” the nation’s highways and transit systems and \$108.2 billion short of the level needed to “improve” them. By 2017, the gap between revenue and needs will have widened; revenues will be \$71.5 billion short of the levels needed to “maintain” and \$137.5 billion short of the levels needed to “improve” highways and transit systems.

The gap between needs and revenues will become much clearer to state transportation agencies and the public over the next five years as key transportation funding programs run short of money. At current levels of income and expenditure, the Highway Account of the federal Highway Trust Fund could be in deficit starting as early as 2008 (before the end of the SAFETEA-LU authorization period) and the Transit Account could be in deficit starting around 2013.¹

This paper explores the recent experience of states and local governments in their search to expand existing sources of revenue and open up new sources. Table 4, reproduced from the NCHRP 20-24(49) study of state and local highway and transit funding practices, lists strategies for expanding highway and transit funding.

Seven cases studies were selected from this table as representing successful actions by state DOTs to expand existing sources of revenue or open up new revenue and financ-

ing sources. The first two cases look at efforts by states to increase revenues from motor fuel taxes, in Ohio by raising the motor fuel excise tax, and in Georgia by applying a sales tax to motor fuels. The third case study looks at recent Missouri experience with local option sales taxes, which are being used successfully by county and local governments to fund specific highway and transit improvements. The fourth case looks at the growing push to fund new roads through tolling, using Florida’s history as an example. The fifth case looks at Oregon’s experiment with vehicle-miles-of-travel (VMT) user fees to examine the issues and opportunities involved in extending tolling and pricing from new roads to existing roads and perhaps to all roads as a substitute for gallonage-based fuel taxes.

The last two cases look at ways to leverage revenue streams. The Idaho case looks at a recent example of the use of GARVEE bonds to advance projects by leveraging future federal revenues. The Indiana case looks at the asset leasing agreement for the Indiana Toll Road, in which the state leased the long-term stream of toll revenues to a private sector investor in exchange for a large, one-time, upfront payment to the state.

The case study experiences suggest the following:

- Indexing and increasing motor fuel taxes is a viable option and could generate the greatest revenue yield, at least for the next decade. The findings of the U.S. Chamber of Commerce report on *Future Highway and Public Transportation Financing* found that indexing federal motor fuel taxes back to 1993 would generate enough new revenue to close 39 percent of the gap between current revenues and the level of expenditure needed to “maintain” the nation’s highway and transit systems, and 18 percent of the gap to “improve” them. Indexing state motor fuel taxes would close the gap to “maintain” by five percent and the gap to “improve” by two percent. Aggressive use of tolling and pricing would close the gaps by two and one percents, respectively. Indexing and increasing motor fuel taxes will generate the largest short-term yield, but will not suffice; states must look to a package of revenue strategies to fund programs.
- Sales taxes on motor fuels are an alternative to directly increasing motor fuel excise taxes. Taxes on motor fuel

¹ In July 2006, the U.S. DOT and Treasury officials reported to the National Surface Transportation Commission that tax receipts over the last several quarters were higher than anticipated, which may keep the Accounts from falling into deficit for another year.

Table 4. Funding and Finance Strategies

Funding and Finance Strategy by Primary Purpose	Modes				Scope		Yield	States and Jurisdictions That Have Implemented the Strategy
	Highway/Bridge		Transit		Program	Project	Potential Yield	
	Preservation and Maintenance	New Capacity	Operations & Maintenance	Capital				
I. Revenue Generation								
Fuel Taxes								
Raising the motor fuel excise (per gallon) tax	•	•		•	•		H	All states, federal
Indexing of the motor fuel tax (can be indexed to inflation or to other factors such as program costs)	•	•		•	•		H	FL, KY, ME, NE, NC, NY, PA, WV
Sales tax on motor fuel	•	•		•	•		H	CA, GA, HI, IL, IN, MI, NY
Other motor fuel-related taxes	•	•			•		H	NY, PA
Registration and Vehicle Fees								
Raising registration or related fees	•	•			•		H	All states
Vehicle personal property taxes	•	•			•		M	CA, KS, VA
Excise tax on vehicle sales	•	•			•		H	KS, NC, NE, MN, MO, OK, SD
Tolling and Pricing, and Other User Fees								
Tolling new roads and bridges		•				•	M	TX, FL, VA
Tolling existing roads	•	•				•	L	VA
HOT lanes, express toll lanes, truck toll lanes		•				•	M	CA, CO, GA, MN, TX
VMT fees	•	•	•	•	•		H	OR testing, 15-state pooled-fund study led by MN
Transit fees (fares, park-and-ride fees, other)			•		•		H	All transit agencies
Local Option and Beneficiary Charges								
Beneficiary charges/value capture (special assessment impact fees) and tax increment financing		•		•		•	L	CA, FL, OR
Permitting local option taxes for highway improvements	•	•			•	•	M	Multiple
■ Local option vehicle or registration fees	•	•			•		M	CA, HI, MO, NV, OH, TX
■ Local option sales taxes	•	•			•		M	AR, AZ, CA, CO, MO, NM
■ Local option motor fuel taxes	•	•			•		M	AL, FL, HI, IL, NV
Permitting local option taxes for transit			•	•	•		H	Multiple
■ Local option sales taxes			•	•	•		H	AZ, CA, CO, IL, NV, NY, UT, WA
■ Local option income or payroll taxes			•	•	•		H	KY, OR
General Revenue Sources								
General Revenue	•	•	•	•	•		H	Most states and localities
Property Taxes	•	•	•	•	•		H	Many local governments

Table 4. Funding and Finance Strategies (continued)								
Funding and Finance Strategy by Primary Purpose	Modes				Scope		Yield	States and Jurisdictions That Have Implemented the Strategy
	Highway/Bridge		Transit					
	Preservation and Maintenance	New Capacity	Operations & Maintenance	Capital				
II. Project and Program Financing								
Federal Initiatives								
Leveraging of Federal Grants								
GARVEE bonds		•		•	•	•		AK, AR, AZ, CA, CO, KY, ME, MT, NM, ND, OH, OK, PR, RI, VI
State Infrastructure Banks					•	•		AL, AZ, AR, CA, CO, DE, FL, IN, IA, ME, MI, MN, MO, NE, NM, NY, NC, ND, OH, OR, PA, PR, RI, SC, SD, TN, TX, UT, VT, VA, WA, WI, WY
Section 129 Loans		•				•		TX
Leveraging of user fees or tax revenues with credit instruments								
TIFIA/RRIF Assistance		•		•		•		AK, CA, DC, DE, FL, IA, LA, MD, ME, MN, MO, NV, NY, PR, RI, SC, TN, TX, VA
Leveraging of User Fees and/or Tax Revenues with Tax Subsidies								
Private activity bonds		•		•		•		None to date (\$15 billion cap). Long history of PAB use for airports, seaports and other purposes
Tax credit bonds	•	•	•	•	•	•		Not yet enacted for transportation; current tax credit bond programs exist for schools (QZABs) and energy (CREBs)
State/Local Initiatives								
Leveraging of tax revenues (shadow tolls/availability payments)		•				•		United Kingdom, Finland, Germany, FL pending
Leveraging of user fees (asset leases)	•	•			•			IL, IN
III. Efficient Management								
Federal Initiatives								
Grant management (cash flow) tools, including flexible match, tapered match, toll credits, AC/PCAC (SEP-15)	•	•				•		Many
State/Local Initiatives								
Public-private partnerships (PPP) for project delivery	•	•	•	•		•		States with PPP Legislation: AK, AL, AZ, CA, CO, DE, FL, GA, IN, LA, MD, MN,MO, NC, NV, OR, PR, SC, TX, UT, VA, WA

Source: *Future Financing Options to Meet Highway and Transit Needs*, NCHRP Project 20-24(49), Interim Report, May 2006.

sales are particularly attractive today because the price of gasoline is rising. However, there is no guarantee that prices will rise or be stable from year to year. This means that yields from motor fuel sales taxes could fluctuate greatly as prices fluctuate at the pump.

- Tolls are a new and attractive source of transportation revenue because they are viewed by the public as a direct user fee and can be tied to specific new facilities. Variable price tolling can be used to better match demand to supply, potentially reducing the need for expensive capital investment to add capacity. However, the revenues that can be generated by tolling new facilities and highly congested existing facilities are limited by the number of these facilities. Even with aggressive assumptions about the number of congested roadways that can be tolled, the revenue stream from tolling alone will not replace shrinking motor fuel tax revenues.
- VMT or mileage-based user fees are a means to extend tolling and pricing to all roads, possibly replacing most gallonage-based motor fuel taxes, but the technology and administrative systems to implement VMT fees are still a decade or more away. VMT systems will be attractive because their yield will not be tied directly to fuel consumption, and they can be tailored by vehicle and road type, use, time of day and week, etc. However, VMT fees will be considerably more complex to explain and costly to manage, and gaining political acceptance means addressing privacy issues.
- Bonding and related financing techniques can be effective at accelerating specific projects, and they offer a stop-gap measure to sustain underfunded transportation programs, but their yield is limited by state debt caps and by a lack of new revenue streams to service the long-term debt. Moreover, there is concern that using bonding extensively will commit too much of future highway revenue to debt service, leaving little or no revenue for future projects.
- Asset leasing, as a revenue generating approach, is limited by the number of roads, bridges, and tunnels that have high enough traffic volumes to sustain tolling and pricing at rates attractive to private sector investors. Some analysts are concerned about the political and system-level traffic management implications of ced-

ing near-complete control over toll prices and toll road management to private businesses for a generation or more into the future.

The case studies reaffirm basic lessons about the development and implementation of transportation policies and programs:

- The public will support tax increases when state DOTs can make a compelling case for them. This is easiest to do when the state DOT can tie increased taxes to specific major capital investments that the public, the legislature, and the governor can readily identify, understand, and verify. It is better, but not always critical, to tie tax increases to a program of improvements that serve many constituencies across a state.
- Time and champions are very important to gaining revenue increases. Some initiatives such as the Indiana Toll Road lease deal were implemented relatively quickly, but most of the other initiatives took years to sell, negotiate, and conclude; and almost all required a major commitment of political capital.
- Much of the success in gaining revenue increases hinges on the public's perception of the state DOT as an effective and responsible steward of the state's transportation budget and system.

The applicability and feasibility of specific revenue strategies will vary by state, but for the AASHTO community as a whole, the case studies suggest the following:

- State DOTs should aggressively develop portfolios of revenue sources; the era of the motor fuel tax as the single, dominant revenue source is waning.
- State DOTs, as a national community, should develop strategies that assume that funding and financing mechanisms will be developed across several cycles of state administrations. The tenure of state DOT CEOs in office appears to be getting shorter rather than longer, as is the tenure of state legislators in office, especially in states that adopted term limits. This puts a premium on the community's ability to educate a broader cadre of state DOT officials and politicians, not just today's CEOs and state legislative committee chairs, and sustain and implement funding initiatives despite more frequent staff turnover.

- State DOTs should ensure their programs and investments are clearly linked to economic development and job growth.
- State DOTs should pay increasing attention to how the public perceives their stewardship.

**The white papers are available for
download on the AASHTO Web site:
[www.transportation.org
/meetings/CEOLeadership](http://www.transportation.org/meetings/CEOLeadership)**

Writer: Nancy Strege
Photographer: Nancy Johnson
Editor: Pamela Snopl
Designer: Cadie Wright

UNIVERSITY OF MINNESOTA



CENTER FOR TRANSPORTATION STUDIES

Center for Transportation Studies
200 Safety and Transportation Building
511 Washington Ave S.E.
Minneapolis, MN 55421

Phone: 612-626-1077
Fax: 612-625-7331
E-mail: cts@umn.edu
Web: www.cts.umn.edu

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation. This publication is available in alternative formats upon request.

